

Many other species are of occasional occurrence. With time for more detailed study, this list could be considerably enlarged. The writer feels that such a study would establish the presence of several additional cosmopolitan storage pests as well as of numerous endemic species.

## TWO NEW AEDES FROM GUAM (DIPTERA, CULICIDAE).

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Recently there have been received for determination two apparently undescribed species of mosquitoes of the genus *Aedes* from the island of Guam. One of these belongs to the subgenus *Stegomyia* and is found throughout the island, causing considerable annoyance to man. The other is of the subgenus *Aedimorphus* and is closely related to several Oriental species. Several paratypes of each species have been sent to the British Museum and to Mr. O. H. Swezey of the Hawaiian Sugar Planters' Association.

### *Aedes (Stegomyia) pandani*, new species.

*Female*.—Length 4.25 mm., wing 2.7 mm. Head scales behind eyes flat, pale yellowish, except for a broad patch of dark brown scales at each side of the pale vertical area; in many specimens another, smaller dark patch on each side just above lateral margin of head; pale yellow scales in a narrow line between eyes and on tori dorsally. Clypeus yellowish brown, bare. Palpus 0.45 mm. long, dark brown, with a few white scales at apex. Proboscis dark brown. Scales of mesoscutum dark brown, with a narrow, median stripe of golden-yellow scales, narrowest at posterior third, golden-yellow scales along lateral margins from anterior margin to wing base, and a narrow sublateral stripe of scales of the same color from posterior margin forward, parallel with median stripe and turned abruptly laterad to margin above anterior spiracle. Scutellum with flat scales, pale yellow except for a small patch of dark scales on each lateral lobe. Pleura yellowish brown. Patches of white scales on prothoracic lobes, proepisternum, upper third of sternopleuron, above mid-coxae, and on dorsal, anterior portion of mesepimeron. Postspiracular setae few; no lower mesepimeral bristles. Wing scales narrow, dark. Coxae mostly white-scaled; dorsal and anterior margins of femora I and II and dorsal surface of femur III, widening apically, dark brown; tibiae dark brown; tarsi dark brown, with white bands at bases of first two segments of tarsi I and II, usually not encircling the segments, and complete, white, basal bands on segments 1-4 on tarsus III; last segment of tarsus III with a few pale scales at base; claws of all legs untoothed. Abdomen dark brown, with broad, white, basal bands laterally, that on segment 6 extending somewhat onto dorsal surface; tergite 7 with a white median band; venter pale yellowish.

*Male*.—Ornamentation essentially as in female. Tarsal bands usually narrower. Palpus very slightly longer than proboscis, slender and tapering, brownish black, with four white bands, the basal two broadest. Claws of tarsi I and II elongate, toothed; those of tarsus III short, simple. Terminalia (Fig. 1 a): Style rather short and stout, the apex acute, and the appendage subapical, short; harpaginal fold with a moderate eminence bearing several stout setae; basal lobe densely hairy, extending ventrally from the harpaginal fold; phallosome with stout teeth; lateral lobes of ninth tergite broad, low, with rather long setae.

*Type female and paratypes*.—U. S. National Museum No. 53133.

*Type locality*.—Barrigada Area, Guam.

The type and 36 paratype females were collected at the type locality July 27, 1937, by R. G. Oakley. Additional paratypes, all from Guam, are as follows: Bred from larvae in axils of *Pandanus dubius*, July 25, 1938, R. G. Oakley, 23 females, 29 males; Mt. Tenjo, May 3, 1936, O. H. Swezey, 2 females; Mt. Chachao, May 16, 1936, O. H. Swezey, 2 females, 1 male; Inarajan, May 7, 1936, O. H. Swezey, 11 females; Piti, May 2, 1936, R. L. Usinger, 1 female; no specific locality, May 4, 1936, O. H. Swezey, 1 female, and 1911, D. T. Fullaway, 3 females.

This species would probably fall into the *w-alba* group of Edwards although the thoracic pattern is different from that of most of the members of this group. The species differs from most previously described species belonging to the subgenus in having golden scales on the mesoscutum rather than silvery-white ones. It apparently is closest to the two African, bamboo-inhabiting species, *bambusae* Edwards and *angustus* Edwards, but differs slightly from these in the color markings of the thorax and legs.

Mr. Swezey and Mr. Oakley report this species as being extremely annoying in the daytime, occurring all over the island, but particularly in the woods. The only known breeding place is in the water held in the axils of *Pandanus* leaves. No larvae have been submitted.

#### *Aedes (Aedimorphus) oakleyi*, new species.

*Female*.—Length 4.2 mm., wing 2.9 mm. All recumbent scales of head pale yellow, the dorsal scales slender, lanceolate, the sublateral and lateral scales broad, flat; numerous narrow, erect, brownish scales centrally; a few pale scales between eyes. Clypeus brown, bare. Palpus 0.35 mm. long, yellowish brown, with dark brown scales. Proboscis with dark brown scales, the scales of basal two-thirds, ventrally, mostly yellowish. Scales of mesoscutum narrow, coppery brown, with flecks of yellowish scales on shoulders, above spiracles, and on posterior half sublaterally. Scutellum covered with flat, pale yellow scales. Pleura pale yellow, with a few flat scales of the same color on lower sternopleuron

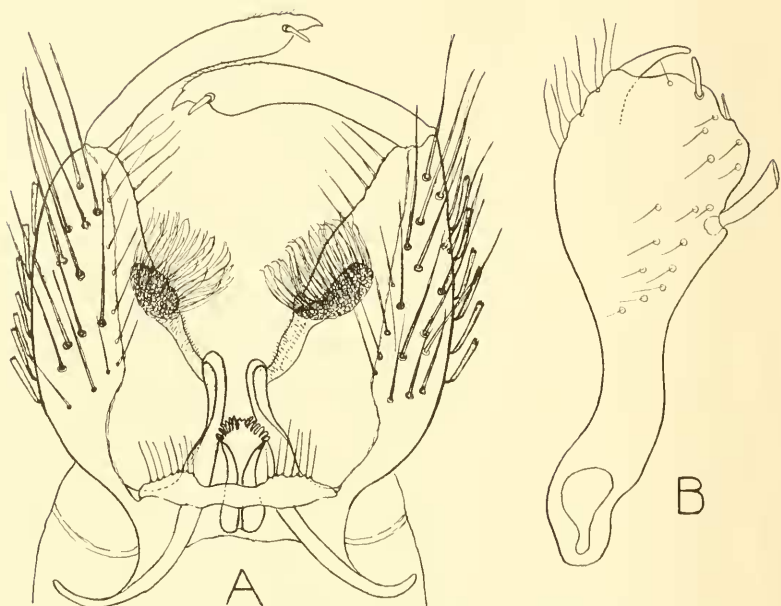


FIG. 1. A. Male terminalia of *Aedes pandani*, n. sp., ventral view.  
 B. Style of *Aedes oakleyi*, n. sp., male.

and upper mesepimeron. Postspiracular setae few; no lower mesepimeral setae. Wing scales narrow, dark. Coxae pale yellow, coxa I with a few brownish scales; femora and tibiae with brown scales anteriorly, pale yellow scales posteriorly, the line of demarcation not pronounced; a small patch of yellow scales at apex of tibia III anteriorly; tarsi dark brown, a few yellowish scales at the bases of some of the segments, but not distinct bands. Claws of tarsi I and II each with a minute tooth; of tarsus III simple. Abdomen dark brown, with pale, yellowish-brown basal bands, wider and paler laterally; scales of venter yellowish.

*Male*.—Coloration essentially as in female; eighth abdominal segment entirely pale-scaled dorsally. Palpus brown, longer than proboscis by nearly one segment, the two apical segments with long hairs. Claws of tarsus I toothed, the others simple. Terminalia: Coxite with no distinct basal lobe, a few stouter setae on a slightly raised area; no regular row of hairs on coxite; style (fig. 1 B) much as in *alboscuteellatus* but the inner proximal appendage broadening apically, with a minute retrorse spine visible from certain angles, and the apical spine longer and more slender.

*Type female and paratypes*.—U. S. National Museum No. 53176.

*Type locality*.—Root Farm, Guam.

The type and paratypes, 62 females and 19 males in all, were reared from a water drum at the type locality, October 3, 1938, by R. G. Oakley. No larvae have been received.

This species would run to *Aedes alboscuteellatus* (Theobald) in the published keys to the Oriental species, but differs in having rather broad abdominal bands, no pale scales at base of costa, the recumbent scales of the head entirely pale, no patches of pale scales at the apices of the femora and the pale scales on the scutellum and apex of tibia III distinctly yellowish rather than silvery white. I take great pleasure in naming this species after Mr. Oakley, the discoverer of the species.

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THE NORTH AMERICAN ANTS OF THE GENUS HARPAGOXENUS FOREL, WITH THE DESCRIPTION OF A NEW SPECIES (HYMENOPTERA : FORMICIDAE).

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*Harpagoxenus* Forel, a genus of degenerate slave-making ants, has been known from only three forms, two of which occur in Europe and one in North America. The European *H. sublaevis* (Nyl.), the genotype, has been recorded from Finland, Denmark, Sweden, Germany, Austria, and Switzerland, and the variety *hirtula* (Nyl.) from Finland. The known hosts of *sublaevis* are three species of *Leptothorax*, namely, *acervorum* (F.), *muscorum* (Nyl.), and *tuberum* (F.).

The single North American species, *Harpagoxenus americanus*, was described by Emery in 1895 from specimens taken by Theodore Pergande in a nest of *Leptothorax curvispinosus* Mayr at Washington, D. C. Although this species was also taken by Wheeler and Schmitt in other localities, until recently almost nothing was known of its biology, especially concerning the ant's method of enslaving its host. In 1927 (see bibliography) both Sturtevant and Creighton published, almost simultaneously, excellent articles furnishing most of the details lacking in our knowledge of the slave-making habits of the species. Their careful observations indicate that the queen of *americanus* enters the nest of the host species, kills or drives away the host ants, and appropriates the brood. Later a mixed colony results. The *americanus* workers of this colony then raid from time to time other nests of the host species in a manner similar to that described for the queen. Although *L. curvispinosus* appears to be the preferred host, *L. longispinosus* Roger is also enslaved. On a few occasions colonies have been found containing *americanus* and both its slave species.